

What is claimed is:

1. A torque transmission apparatus comprising:

a casing;

a first rotational member disposed in the casing;

5 a second rotational member disposed relatively rotatable to the first rotational member;

a frictional engagement portion provided between the first and second rotational members for transmitting torque according to an engaging force;

10 a pressurizing member, including a first and a second members relatively rotatable to each other, that produces a thrust through relative rotation between the first and the second members for bringing the frictional engagement portion into friction engagement; and

15 a actuator supported on the casing for rotationally driving at least one of the first and second members to generate the relative rotation.

2. The torque transmission apparatus according to claim 20 1, wherein the pressurizing member is disposed on an inner radial side of the frictional engagement portion.

3. The torque transmission apparatus according to claim 1, further comprising:

25 an outer wall formed in the first rotational member in at least one of directions along an axis of rotation and

extending towards an inner circumferential side of the first rotational member in a direction along a rotating radius;

a connecting wall formed in the second rotational member and extending along the outer wall;

5 an accommodating recessed portion formed in the outer wall to enter an inner circumferential side of the second rotational member, wherein the pressurizing member is disposed in the accommodating recessed portion;

a penetrating portion formed in the outer wall and
10 facing to the pressurizing member; and

a transmission member disposed in the penetrating portion and interposed between the pressurizing member and the connecting wall of the second rotational member, for transferring a thrust of the pressurizing member to the second
15 rotational member.

4. The torque transmission apparatus according to claim 3, wherein the pressurizing member is disposed on the outer wall side of the connecting wall.

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5. The torque transmission apparatus according to claim 1, further comprising:

a driving member, connecting at one side to the actuator and at the other side to one of the first and second members
25 of the pressurizing member, arranged to step over the first and second rotational members.

6. The torque transmission apparatus according to claim
1, wherein the actuator comprises an electric motor and is
disposed on an outer radial side of the frictional engagement
5 portion.

7. The torque transmission apparatus according to claim
6, wherein the actuator and the frictional engagement portion
are offset in a rotational axial direction of the first and
10 second rotational members.

8. The torque transmission apparatus according to claim
1, further comprising:

a cancellation portion, for canceling or reducing the
15 thrust between the first and the second members produced by
a drag torque, provided at one of a first portion between the
penetrating portion and the transmission member and a second
portion in the pressurizing member.

20 9. The torque transmission apparatus according to claim
8, wherein the cancellation portion includes a cam surface.

10. The torque transmission apparatus according to claim
1, further comprising:

25 a damper mechanism for damping an inertia force on
the actuator side and a thrust produced by the inertia force

applied to the pressurizing member.

11. The torque transmission apparatus according to claim 1, further comprising:

5 a controller controlling the actuator, to drive the pressurizing member relatively fast when the actuator removes a play in a rotating direction of the pressurizing member, and to drive the pressurizing member relatively slow when the removal of the play is completed.

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12. The torque transmission apparatus according to claim 1, further comprising:

a controller controlling the actuator, according to a condition of an automobile, to hold the pressurizing member on standby at a neutral position where there exists a play and at a play removed position where there exist no or little play.

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13. The torque transmission apparatus according to claim 1, further comprising:

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a positioning portion formed on the casing for positioning the pressurizing member in the rotating direction and enabling to assemble the pressurizing member, wherein the positioning portion maintains a neutral position of the pressurizing member.

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14. The torque transmission apparatus according to claim 1, further comprising:

a rotation coupling member disposed between the actuator and the pressurizing member; and

5 a controller controlling the rotation coupling member, to be in a rotation engaging state for producing the thrust when the actuator rotates to drive the pressurizing member, and to be in a rotation disengaging state for releasing the thrust.

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15. The torque transmission apparatus according to claim 14, wherein the rotation coupling member is disposed on the actuator, and

the rotation coupling member engages or disengages a rotational driving of a rotating drive shaft of the actuator.

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16. The torque transmission apparatus according to claim 1, further comprising:

a boss portion formed on the first rotational member;

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an oil pump supported on the casing, and engaged with the boss portion in an interlocking fashion.

17. The torque transmission apparatus according to claim 1 which is constructed as a starter clutch disposed on an output side of an engine or a torque transmission apparatus disposed

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in any one of an output side of transfer apparatus of a four-wheel-drive vehicle, an input side of rear differential, a propeller shaft between the transfer and the rear differential, front axle shafts and rear axle shafts.

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